



PATENT

Case Docket No. NIH209.001C1  
Date: May 25, 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) : Mayer et al.  
Appl. No. : 10/677,980  
Filed : October 2, 2003  
For : PLASMODIUM FALCIPARUM  
ERYTHROCYTE BINDING  
PROTEIN BAEBL FOR USE  
AS A VACCINE  
Examiner : Unknown  
Group Art Unit : 1614

I hereby certify that this correspondence and all marked attachments are being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on

May 25, 2004

(Date)

Nancy W. Vensko, Reg. No. 36,298

TRANSMITTAL LETTER

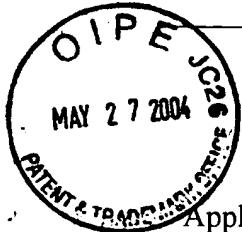
Mail Stop: Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Enclosed for filing in the above-identified application are:

- (X) An Information Disclosure Statement.
- (X) A PTO Form 1449 with thirty-four (34) references.
- (X) The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Account No. 11-1410.
- (X) Return prepaid postcard.

Nancy W. Vensko  
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## INFORMATION DISCLOSURE STATEMENT

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ERYTHROCYTE BINDING PROTEIN  
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Examiner : Unknown  
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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Enclosed is form PTO-1449 listing 34 references. Copies of disclosed U.S. patents and/or publications are not included pursuant to PTO waiver of the requirement under 37 C.F.R. § 1.98(a)(2)(i) for applications filed after June 30, 2003. Copies of other references, if listed, are enclosed.

This Information Disclosure Statement is being filed before the receipt of a first Office Action on the merits, and presumably no fee is required in accordance with 37 C.F.R. § 1.97(b)(3). If a first Office Action on the merits was mailed before the mailing date of this Statement, the Commissioner is authorized to charge the fee set forth in 37 C.F.R. § 1.17(p) to Deposit Account No. 11-1410.

Respectfully submitted,

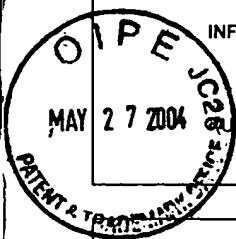
KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 5/25/04

By: 

Nancy W. Vensko  
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FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. NIH209.001C1	APPLICATION NO. 10/677,980
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		APPLICANT Mayer et al.	
MAY 27 2004 (USE SEVERAL SHEETS IF NECESSARY)		FILING DATE October 2, 2003	GROUP 1614



## U.S. PATENT DOCUMENTS

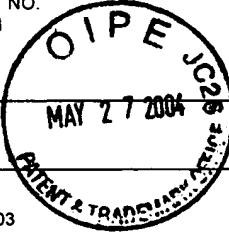
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
	1.	US 5,849,306	12/15/1998	Sim et al.			
	2.	US 5,993,827	11/30/1999	Sim et al.			
	3.	US 6,392,026	5/21/2002	Sim et al.			

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO

EXAMINER INITIAL	OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
4.	Adams, J.H. et al. 1990 "The duffy receptor family of <i>Plasmodium knowlesi</i> is located within the micronemes of invasive malaria merozoites," <i>Cell</i> 63:142-153.
5.	Adams, J.H. et al. 1992 "A family of erythrocyte binding proteins of malaria parasites," <i>PNAS USA</i> 89:7085-7089.
6.	Adams, J.H. et al. 2001 "An expanding <i>ebl</i> family of <i>Plasmodium falciparum</i> " <i>Trends Parasitol</i> 17:297-9.
7.	Aikawa, M. et al. 1978 "Erythrocyte entry by malarial parasites," <i>J Cell Biol</i> 77:72-82.
8.	Anstee, D.J. et al. 1984 "Two individuals with elliptocytic red cells apparently lack three minor erythrocyte membrane sialoglycoproteins," <i>Biochem J</i> 218:615-619.
9.	Becker, S.I. et al. 1998 "Protection of mice against <i>Plasmodium yoelii</i> sporozoite challenge with <i>P. yoelii</i> merozoite surface protein 1 DNA vaccines," <i>Infect Immun</i> 66:3457-3461.
10.	Booth, P.B. et al. 1982 "Red cell antigen, serum protein and red cell enzyme polymorphisms in Karkar islanders and inhabitants of the adjacent North Coast of New Guinea," <i>Hum Hered</i> 32:385-403.
11.	Camus, D. et al. 1985 "A <i>Plasmodium falciparum</i> antigen that binds to host erythrocytes and merozoites," <i>Science</i> 230:553-556.
12.	Chitnis, C.E. et al. 1994 "Identification of the erythrocyte binding domains of <i>Plasmodium vivax</i> and <i>Plasmodium knowlesi</i> proteins involved in erythrocyte invasion," <i>J Exp Med</i> 180:497-506.
13.	Colin, Y. et al. 1995 "Gerbich blood groups and minor glycophorins" in <i>Blood Cell Biochemistry</i> , Vol. 6, eds. Cartron, J. P. & Rouger, P. (Plenum, New York), pp. 331-350.
14.	Dolan, S.A. et al. 1990 "Evidence for a switching mechanism in the invasion of erythrocytes by <i>Plasmodium falciparum</i> ," <i>J Clin Invest</i> 86:618-624.
15.	Dvorak, J.A. et al. 1975 "Invasion of erythrocytes by malaria merozoites," <i>Science</i> 187:748-750.

EXAMINER	DATE CONSIDERED
*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.	

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EXAMINER INITIAL	OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
16.	Gallinski, M.R. et al. 1992 "A reticulocyte-binding protein complex of <i>Plasmodium vivax</i> merozoites," <i>Cell</i> 69:1213-1226.
17.	Haynes, J.D. et al. 1988 "Receptor-like specificity of a <i>Plasmodium knowlesi</i> malarial protein that binds to duffy antigen ligands on erythrocytes," <i>J Exp Med</i> 167:1873-1881.
18.	Judd, W.J. 1994 "Procedure IX-D Frozen RBCs - liquid nitrogen preservation & recovery," in <i>Methods in Immunohematology</i> , ed. Judd, W. J. (Montgomery Scientific, Durham, NC), pp. 188-190.
19.	Kaneko, O. et al. 1999 " <i>Plasmodium falciparum</i> : invasion of <i>Aotus</i> monkey red blood cells and adaptation to <i>Aotus</i> monkeys," <i>Exp Parasitol</i> 93:116-119.
20.	Kaneko, O. et al. 2000 "Disruption of the C-terminal region of EBA-175 in the Dd2/Nm clone of <i>Plasmodium falciparum</i> does not affect erythrocyte invasion," <i>Mol Biochem Parasitol</i> 110:135-146.
21.	Mallory, D. 1993 "Freezing and recovering rare RBCs using glycerol" in <i>Immunohematology Methods and Procedures</i> First Edition, Mallory D. ed. (American Red Cross, National Reference Laboratory, Rockville, MD), pp. 125-1-125-2.
22.	Mayer, D.C.G. et al. 2001 "Characterization of a <i>Plasmodium falciparum</i> erythrocyte-binding protein paralogous to EBA-175" <i>PNAS USA</i> 98:5222-5227.
23.	Miller, L.H. et al. 1973 "Influence of erythrocyte membrane components on malaria merozoite invasion," <i>J Exp Med</i> 138:1597-1601.
24.	Miller, L.H. et al. 1976 "The resistance factor to <i>Plasmodium vivax</i> in blacks," <i>N Engl J Med</i> 295:302-304.
25.	Miller, L.H. et al. 1979 "Interaction between cytochalasin B-treated malarial parasites and erythrocytes," <i>J Exp Med</i> 149:172-184.
26.	Pasvol, G. et al. 1984 "Glycophorin C and the invasion of red cells by <i>Plasmodium falciparum</i> ," <i>The Lancet</i> 1:907-908.
27.	Ranjan, A. et al. 1999 "Mapping regions containing binding residues within functional domains of <i>Plasmodium vivax</i> and <i>Plasmodium knowlesi</i> erythrocyte-binding proteins," <i>PNAS USA</i> 96:14067-14072.
28.	Reid, M.E. et al. 1994 "Molecular basis of glycophorin C variants and their associated blood group antigens," <i>Transfus Med (Oxford)</i> 4:139-146.
29.	Serjeantson, S.W. 1989 "A selective advantage for the Gerbich-negative phenotypes in malarious areas of Papua, New Guinea," <i>Papua New Guinea Med J</i> 32:5-9.
30.	Serjeantson, S.W. et al. 1994 "A 3.5 kb deletion in the glycophorin C gene accounts for the Gerbich-negative blood group in Melanesians," <i>Immunol Cell Biol</i> 72:23-27.
31.	Sim, B.K.L. et al. 1990 "Primary structure of the 175K <i>Plasmodium falciparum</i> erythrocyte binding antigen and identification of a peptide which elicits antibodies that inhibit malaria merozoite invasion," <i>J Cell Biol</i> 111:1877-1884.
32.	Sim, B.K.L. et al. 1992 "Localization of the 175-kilodalton erythrocyte binding antigen in micronemes of <i>Plasmodium falciparum</i> merozoites," <i>Mol Biochem Parasitol</i> 51:157-160.

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33.	Sim, B.K.L. et al. 1994 "Receptor and ligand domains for invasion of erythrocytes by <i>Plasmodium falciparum</i> ," <i>Science</i> 264:1941-1944.		
34.	Su, X. et al. 1999 "A genetic map and recombination parameters of the human malaria parasite <i>Plasmodium falciparum</i> ," <i>Science</i> 286:1351-1353.		

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